REMARKS

Rejections under 35 U.S.C. § 102

The Examiner has rejected claims 8, 13, 14, 19, 20 and 24 as allegedly being "clearly anticipated" by U.S. Patent No. 5,623,900 to Topfer et al (Topfer). The Examiner has also rejected claims 24 and 25 as allegedly being "clearly anticipated" by U.S. Patent 2,383,244 to Lundquist et al (Lundquist). Applicant traverses this rejection based on the above Amendments and following Remarks, and respectfully requests that the Examiner reconsider the rejection, and that they withdraw it.

In a rejection under 35 U.S.C. § 102, each and every claim element must be present in the applied reference. However, Topfer does not teach or suggest an "*opening being formed such as to hinder air departing from said opening from traveling away from a majority of said cylinder ports*", as recited in the amended independent claim 8.

Amended independent claim 8 now recites an air induction arrangement for an internal combustion engine comprising an inlet manifold having a plurality of cylinder ports. A feed passage is defined having an opening within said inlet manifold, the opening being formed such as to hinder air departing from the opening from traveling away from a majority of the cylinder ports. Topfer teaches an air induction arrangement having a plurality of suction pipes (2-5) leading to the cylinder ports and a feed passage having a mouth opening (12) (Figs. 1, 2 and 4). The mouth opening of the feed passage is situated in a plane which is arranged perpendicularly to a lateral wall of the chamber of the intake system and which is approximately the same distance from the center axes of the individual suction pipes of the second and third cylinder (column 1, line 66 – column 2, line 3). The location of the mouth opening is determined in an effort to reduce noise as opposed to hindering air departing from the opening from traveling away from a majority of said cylinder ports. For example, the mouth opening of the feed passage is preferably arranged in the area of a node 16 of a first natural gas vibration in the chamber to reduce airborne noise (column 1, lines 18-20 & column 2, lines 61-62). This results in air departing from the mouth opening being directed towards the entries of suction pipes 2 and 3, but also clearly being directed away from the entries of suction pipes 4 and 5. Topfer can therefore not be said to teach the construction of a structure that hinders the departing air from traveling away from a majority of the cylinder ports. In addition, Topfer does not suggest the invention recited in Claim 8, because the objective of Topfer is different than that of the present invention, i.e. to reduce noise as

opposed to hindering air from traveling away from a majority of the cylinder ports. (column 1, lines 18-20). Therefore claim 8 is believed allowable over Topfer.
Claim 13 depends from claim 8. Since claim 8 is believed allowable, claim 13 is also believed allowable. Claim 26 has been added as a dependent claim of claim 8. Claim 26 has the additional limitation of an opening such as to hinder air departing from the opening from traveling away from all the cylinder ports. Topfer does not teach or suggest this limitation. Again one objective of Topfer is to reduce noise. As disclosed, this objective is not consistent with an opening formed such as to hinder air departing from said opening from traveling away from all of said cylinder ports as recited in claim 26. Claim 26 is therefore believed allowable over Topfer.

The Examiner has rejected claim 14 as allegedly being "clearly anticipated" by U.S. Patent No. 5,623,900 to Topfer et al (Topfer). Claim 14 has been amended to recite means for hindering air departing from the feed passage from traveling away from a majority of the cylinder ports. As discussed above, the objective of Topfer is different than that of the present invention, i.e. to reduce noise as opposed to hindering air from traveling away from a majority of said cylinder ports. Topfer does not teach or suggest a feed passage including means for hindering air departing from said feed passage from traveling away from a majority of the cylinder ports. As a matter of fact, as depicted in Fig. 4 the mouth 12 of the feed passage 7 actually promotes the air to travel away from suction tubes 4 and 5. Therefore Topfer does not teach or suggest claim 14. Claim 20 depends from claim 14. Since claim 14 is believed allowable, claim 20 is also believed allowable.

The Examiner has rejected claim 24 as allegedly being "clearly anticipated" by U.S. Patent No. 5,623,900 to Topfer et al (Topfer) and US 2,383,244 to Lundquist et al (Lundquist). Dependent claim 25 has been rejected by the examiner based on Topfer.
Amended claim 24 now recites an air induction arrangement for an internal combustion engine comprising an inlet manifold defining an interior space, the inlet manifold having at least a first and a second port adapted to deliver air from the interior space to a first and a second engine chamber. The arrangement further has a feed passage for feeding air into the inlet manifold interior space and the feed passage has an opening located within the inlet manifold space, whereby the opening has a periphery and a configuration. The configuration of the feed passage opening is at least one of (a) a configuration such as to hinder air departing from said opening from traveling away from a majority of the manifold ports, (b) a

configuration such that a first portion of the periphery is distal to one of the manifold ports and second portion of the periphery is proximal to said one of the manifold ports and the first portion protrudes further into the inlet manifold interior space than the second portion, and (c) a configuration means for supplying air to the combustion chambers in a manner to reduce particle emissions from air-fuel combustion in the combustion chambers.

As discussed above, the objective of Topfer is different than that of the present invention, i.e. to reduce noise as opposed to hindering air from traveling away from a majority of said cylinder ports. Topfer does not teach or suggest a feed passage including means for hindering air departing from said feed passage from traveling away from a majority of the cylinder ports as recited in claim 24 of the current application. Nor does Topfer teach a feed passage opening with a periphery of which a first portion protrudes further into the inlet manifold interior space than the second portion as per configuration (b) of claim 24. As can clearly be seen in Fig. 4 of Topfer, mouth opening 12 has a periphery that is in a plane X-X perpendicular to the side walls of chamber 1 and hence all portions of the periphery have the same level of protrusion into the chamber.
Configuration (c) as recited in claim 24 is also not taught or suggested by Topfer. Topfer discloses air departing from the mouth opening being directed towards the entries of suction pipes 2 and 3, and being clearly directed away from the entries of suction pipes 4 and 5. It is not clear that the structure of Topfer will inherently reduce emissions as the configuration as shown may starve suction tubes 4 and 5 of combustion air, therefore seeming to increase emissions over the present invention.

Lundquist does not teach a configuration such as recited in amended claim 24, having means for supply of air to the combustion chambers in a manner to reduce particle emissions from air-fuel combustion in the combustion chambers. Lundquist teaches an air induction arrangement having a plurality of intake pipes (24) and a feed passage (22) with a mouth opening (Fig. 1). Air departing from the mouth opening is directed towards some of the intake pipes which are in front of the mouth opening. However, as can clearly be seen in Fig. 1, air departing from the mouth opening is directed away from most of the intake pipes which are located besides conduit 22. Lundquist can therefore not be said to teach the construction of a structure that hinders the departing air from traveling away from a majority of the cylinder ports.

Furthermore, Lundquist does not teach a configuration such that a first portion of the periphery is distal to one of the manifold ports, a second portion is proximal to the one of the manifold ports, and the first portion protrudes further into the inlet manifold interior space than the second portion. As shown, no two points located on the periphery of the mouth opening of the conduit 22 have different degrees of protrusion into the manifold chamber 13.

Neither does Lundquist teach a configuration that includes means for supplying air to the combustion chambers in a manner to reduce particle emissions from air-fuel combustion in the combustion chambers as recited in claim 24. Again, it is not clear that the structure as taught by Lundquist inherently reduces emissions. Air departing from the mouth opening will have a natural tendency to flow towards the intake pipes in front of the mouth opening, but will not as easily flow towards the intake pipes bedsides the conduit. Therefore since the air flow is not prevented from traveling away from the majority, most intake pipes may be starved resulting in unfavorable emissions.

Therefore Claim 24 is considered allowable in view of either Topfer or Lundquist. Accordingly, since Claim 25 depends from Claim 24, Claim 25 is also believed allowable. Claim 27 has been added, and is dependent from claim 24. Claim 27 is therefore also believed to be allowable.

Conclusion

All of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider all presently outstanding objections and rejections, and that they withdraw them.

The Examiner is courteously invited to telephone the undersigned representative if they believe that an interview might be useful for any reason.

Respectfully submitted,

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